

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (cancelled).

2 (previously presented). The method claimed in claim 3, wherein the step of providing source digital images further comprises the step of digitizing source photographic images to form source digital images.

3 (currently amended). A method for producing a cropped digital image, comprising the steps of:

providing a plurality of partially overlapping source digital images;
providing a cropping aspect ratio L:H, the cropping aspect ratio being the ratio of the length to the height of the cropped digital image;

providing a cropping criterion, the cropping criterion being a criterion for the size and location of the cropped digital image;

combining the source digital images to form a composite digital image;

automatically selecting the cropping region of the composite digital image according to the cropping criterion, said cropping region being a rectangular region having said aspect ratio L:H, and having size and location determined by the cropping criterion; and,

cropping the composite digital image to the cropping region to form a cropped digital image;

wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of one of the sets:

a) the set of all composite digital image regions having said aspect ratio L:H;

b) the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the composite digital image; and

c) the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the main subject of the composite digital image;

~~and wherein the source digital images have pixel values that are linearly or logarithmically related to scene intensity and the step of providing source digital images further comprises applying a metric exposure transform to a source digital image such that the pixel values of the source digital image are linearly or logarithmically related to scene intensity.~~

4 (currently amended). A method for producing a cropped digital image, comprising the steps of:

a) providing a plurality of partially overlapping source digital images;

b) providing a cropping aspect ratio L:H, the cropping aspect ratio being the ratio of the length to the height of the cropped digital image;

c) providing a cropping criterion, the cropping criterion being a criterion for the size and location of the cropped digital image;

d) combining the source digital images to form a composite digital image;

e) automatically selecting the cropping region of the composite digital image according to the cropping criterion, said cropping region being a rectangular region having said aspect ratio L:H, and having size and location determined by the cropping criterion; and,

f) cropping the composite digital image to the cropping region to form a cropped digital image;

wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the composite digital image;

and wherein the source digital images have pixel values that are linearly or logarithmically related to scene intensity and the step of providing source digital

images further comprises applying a metric exposure transform to a source digital image such that the pixel values of the source digital image are changed by said transform and are linearly or logarithmically related to scene intensity.

5 (currently amended). A method for producing a cropped digital image, comprising the steps of:

- providing a plurality of partially overlapping source digital images;
- providing a cropping aspect ratio L:H, the cropping aspect ratio being the ratio of the length to the height of the cropped digital image;
- providing a cropping criterion, the cropping criterion being a criterion for the size and location of the cropped digital image;
- combining the source digital images to form a composite digital image;
- ~~automatically~~ computing a main subject of the composite digital image ~~using a reasoning engine;~~
- automatically selecting the cropping region of the composite digital image according to the cropping criterion, said cropping region being a rectangular region having said aspect ratio L:H, and having size and location determined by the cropping criterion; and,
- cropping the composite digital image to the cropping region to form a cropped digital image;
- wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the main subject of the composite digital image.

6 (previously presented). The method claimed in claim 3, further comprising the step of:

- resizing the cropped digital image for display.

7 (previously presented). The method claimed in claim 3, further comprising the step of:

- resizing the cropped digital image for hardcopy output.

8 (previously presented). The method claimed in claim 3, further comprising the step of:

transforming the pixel values of the cropped digital image to an output device compatible color space.

9 (previously presented). The method claimed in claim 5, wherein the source digital images have pixel values that are linearly or logarithmically related to scene intensity.

10 (currently amended). The method claimed in claim 9, wherein the step of providing source digital images further comprises applying a metric transform to a source digital image such that the pixel values of the source digital image changed by said transform are linearly or logarithmically related to scene intensity.

11 (currently amended). The method claimed in claim 9, wherein the step of providing source digital images further comprises applying linear exposure transform(s) to one or more of the source digital images, wherein said transform(s) to produce source digital images having pixel values that closely match in an overlapping region.

12 (original). The method claimed in claim 9, wherein the step of providing source digital images further comprises applying radial exposure transform(s) to one or more of the source digital images to compensate for exposure falloff.

13 (previously presented). The method claimed in claim 3, wherein the step of combining source digital images further comprises the steps of:

- i) warping the source digital images to compensate for distortion due to perspective projection, yielding warped digital images;
- ii) aligning the warped digital images to identify overlapping regions; and

iii) blending the warped digital images in the overlapping regions to form a composite digital image.

14 (original). The method claimed in claim 13, wherein the step of blending warped digital images includes calculating a weighted average of the pixel values in the overlapping region.

15 (original). The method claimed in claim 13, wherein the step of blending warped digital images further comprises the steps of:

- i) projecting the warped digital images to simulate image capture on parallel image planes, forming projected digital images;
- ii) morphing the projected digital images in the overlapping regions to form a projected composite digital image;
- iii) choosing viewing parameters for a composite digital image; and,
- iv) re-projecting the projected composite digital image to simulate image capture with the chosen viewing parameters, forming a composite digital image.

16 (previously presented). The method claimed in claim 3, wherein the step of combining source digital images further comprises warping the composite digital image to simulate projection onto a geometrical surface suitable for viewing.

17 (currently amended). The method claimed in claim 3, wherein the aspect ratio is one of a portrait aspect ratio and a landscape aspect ratio.

18 (cancelled).

19 (currently amended). The method claimed in claim 3, wherein the aspect ratio is one of: 3:2, 16:9, 3:1, 2:3, 9:16, and 1:3.

20-24 (cancelled).

25 (previously presented). The method claimed in claim 3, wherein the aspect ratio is included as meta-data with at least one of the source digital images.

26 (previously presented). A system for producing a cropped digital image, comprising:

- a plurality of partially overlapping source digital images;
- means for specifying a cropping aspect ratio L:H, the cropping aspect ratio being the ratio of the length to the height of the cropped digital image;
- means for specifying a cropping criterion, the cropping criterion being a criterion for the size and location of the cropped digital image;
- means for combining the source digital images to form a composite digital image;
- means for automatically computing a main subject of the composite digital image using a reasoning engine;
- means for automatically selecting the cropping region of the composite digital image according to the cropping criterion, said cropping region being a rectangular region having said aspect ratio L:H, and having size and location determined by the cropping criterion; and,
- means for cropping the composite digital image to the cropping region to form a cropped digital image

wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of:

- the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the main subject of the composite digital image.

27 (previously presented). A computer program product stored on a computer readable medium for performing the method of claim 3.

28 (currently amended). A method for producing a cropped digital image, comprising the steps of:

- providing a plurality of partially overlapping source digital images;
- providing a cropping aspect ratio;

providing a cropping criterion, said cropping criterion being a criterion for a size and location of the cropped digital image;
combining said source digital images to form a composite digital image;
automatically selecting a cropping region of said composite digital image according to said cropping criterion, said cropping region being a rectangular region having said aspect ratio, and said size and said location determined by said cropping criterion; and,
cropping said composite digital image to said cropping region;
wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions having said aspect ratio;
and wherein the source digital images have pixel values that are linearly or logarithmically related to scene intensity and the step of providing source digital images further comprises applying a metric exposure transform to a source digital image such that the pixel values of the source digital image are changed by said transform and are linearly or logarithmically related to scene intensity.

29 (new). The method of claim 3 wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions having said aspect ratio L:H.

30 (new). The method of claim 3 wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the composite digital image.

31 (new). The method of claim 3 wherein the cropping criterion specifies that the cropped digital image is the composite digital image region that is largest in area of the set of all composite digital image regions having said aspect ratio L:H that are centered at the centroid of the main subject of the composite digital image.

32 (new). The method of claim 3 wherein the source digital images have pixel values that are linearly or logarithmically related to scene intensity and the step of providing source digital images further comprises applying a metric exposure transform to a source digital image, wherein said exposure transform changes the pixel values of the source digital image such that, following said applying, the pixel values of the source digital image are linearly or logarithmically related to scene intensity.

33 (new). The method of claim 5 wherein said computing is automatic using a reasoning engine.